A Short History of Rampgill and Scaleburn Mines

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February 2011

Rampgill vein was one of the first to be exploited. In 1690 it was worked in the Slate sills and partly in the Firestone[1]. The commissioners of Greenwich Hospital started a level at Rampgill mine in 1736, near the Nent, but they found very little ore. Having been unsuccessful themselves they gave the lease, in 1739, to Colonel Liddell.

In 1745 the London Lead Company purchase the smelt mill at Nenthead along with the leases owned by Liddell. Originally these leases were for 1200 yard lengths with 40 yards either side, and had to be worked for at least nine months in the year by no fewer than four men; the leases were to be renewed after 21 years. In the 1823 the company was able to consolidate its leases and in place of having to keep four men in each of their stretches of vein the company undertook to employ at least 100 men in the Nenthead group of mines[2]

The original Rampgill Low level was driven from near the River Nent and was small in cross section. Wallace reports that, "... the vein proved to be exceedingly rich right up to the boundary of the manor-a distance of 300 fathoms. It was considered so valuable that Mr Smeaton was employed, in 1763 to, fix the boundary between Sir W Blackett and the Greenwich Hospital's manors."[3]

In 1778 John Smeaton was again asked to settle a dispute over the position of the boundary on the Rampgill vein between Coalcleugh and Rampgill mines. This time the dispute was between the Blackett Company and the Governor and Company. Joseph Hilton (late Moor Master) and Joseph Dickinson (Principle mine agent for the Blackett company) had set the boundary between Rampgill and Coalcleugh mines. To do this they had put a marker stake on the surface, and then placed an iron wedge in the Great Limestone in Rampgill vein to mark the underground boundary, it being directly perpendicular to the marker stake on the surface. Robert Percival (Principal mine agent for the Governor and Company) disagreed with the positioning of the stake saying that in his opinion it was not perpendicular to the iron wedge. John Smeaton checked the calculations and in a letter dated the 8th May 1779 gave his results he had found that the wedge was " ... four inches north by east of the magnetic meridian from a perpendicular line supposed to be let fall from the centre of the wooden post." Calculations showed that the forehead of Rampgill mine was eighteen and one half inch inside the boundary of the Manor of Alston Moor. Robert Percival and Joseph Dickinson both accepted his ruling on the matter.[4]

In 1768 the first hydraulic pumping engine on Alston Moor was installed in Rampgill mine. William Westgarth the agent for Coalcleugh mines designed this engine. Later another engine was installed at the bottom of the engine shaft in order to drain water from the Scaleburn vein.[5]

The minutes of The London Lead Company for the 8th April 1790 give the following profit and loss figures for Rampgill mine.

Date	Losses			Date	Gains		
	£	s	d		£	s	d
1781	382	1	0	1782	472	3	5
1783	1413	8	7	1784	1155	5	11
1785	546	16	6	1786	4801	8	6
1789	615	8	2	1787	278	1	7
Total Loss	**2957**	**14**	**3**	1788	1063	13	11
				Total Gain	**3450**	**2**	**6**

Actual Profit for Rampgill Mine 1781 - 1789 = £492 8s 3d

The profit and losses for Rampgill mine during the period 1791 to 1808 are given below.[6]

Date	Losses			Date	Gains		
	£	s	d		£	s	d
1794	437	8	11	1791	2,224	7	3
1798	325	9	2	1792	1,662	2	2
Total Loss	**762**	**18**	**1**	1793	141	18	7
				1795	645	8	2
				1796	1,042	17	2
				1797	133	14	2
				1799	2	5	0
				1800	54	11	8
				1801	3	8	8
				1802	653	17	11
				1803	679	5	5
				1804	682	7	9
				1805	1,245	11	4
				1806	1,000	12	7
				1807	1,060	12	7
				1808	1,384	7	9
				Total Gain	**12,617**	**4**	**7**

Actual Profit for Rampgill Mine 1791 - 1808 = £11,854 6s 6d

The present Horse level was started in 1800 by Thomas Dodd, the agent for the London Lead Company, which is above the old level (it served the Scaleburn and Rampgill workings). The level cut through the band of cross veins and by January 1821, the forehead was at Rowes rise, and by the 17th June 1822 it was 50 feet east of the Engine sump. When the level reached Rampgill cross vein it was found that the vein had not been tried, and the company was able to raise a considerable amount of ore. This ore was originally washed at the High Rampgill Washing Place, which was close to the mouth of the level. By 1818 the Low Rampgill Washing place had been designed with many new improvements, in the crushing and washing processes. There was a large crushing mill, which used three pairs of crushing rollers, which was connected to the various mine entrances by rail.

The Rampgill cross vein connected to the Scaleburn vein. Working to the east along the cross vein, the company cut Rampgill Sun vein and 2nd Sun vein. The Hangingshaw level connects with Rampgill Sun vein, the

forehead of which was reached on the 15th February 1821. It was later driven a further 12 fathoms, at which point there is Lattimer's 2nd shaft. Hangingshaw level itself was continued to the Southwest where it connects with Smallcleugh mine through Prouds flat and sump.

The John Irwin Cross cut was driven to the south east from the Rampgill vein and cuts the Hangingshaw vein, the forehead on the western branch of the workings was reached on the 7th February 1826, a rise here in the Great Limestone connects the Rampgill mine with Smallcleugh mine.

On the 13th October 1830, the Rampgill Firestone level was driven into the vein giving easy access to the higher levels and improving ventilation. The ore minerals at Rampgill were Galena, from which silver was recovered at the rate of 7 oz silver per ton of lead, and Sphalerite.[7]

Rampgill yielded 350,000 bings (2.5 bings = 1 ton so 140,000 tons) of lead ore between 1703 and 1886.[8] The Greenwich Hospital report of 1870 estimated that the Rampgill vein had yielded ore worth £1,500,000 in the previous 150 years; 1825 giving the highest yield of 28,834 bings and they put the production for 1870 at about 10,000 bings of ore.[9]

Scaleburn vein

Scaleburn vein is thought to be an extension of the Dowgang vein[10] that is seen on the surface as the man made valley Dowgang Hush. In 1767 (the earliest lease date in the London Lead Company minutes is the 1st July 1767; although some sources claim 1756 as the earliest date) the London Lead Company obtained the Scaleburn lease. By 1778 trials had begun in this vein from Rampgill, the main access being from the Rampgill Horse Level. Sub levels were cut on top of the Great Limestone, and above the Little Limestone, there was also the Firestone Level, which was driven from the surface. The Scaleburn vein had been worked earlier from the surface near Coalcleugh evidence being the line of surface shafts a number of which are shown on the London Lead Company plans of this vein. The output of ore for Scaleburn vein for 1774 as 640 bings, 1775 = 1,580 bings, 1776 = 1,780 bings and 1780 it was 3,800 bings; which was the highest figure recorded for the vein.[11]

The minutes of The London Lead Company for the 8th April 1790 give the following figures for the profit and loss of Scaleburn mine.

Date	Losses			Date	Gains		
	£	s	d		£	s	d
1781	420	19	9	1782	332	2	2
1783	1,000	18	4	1784	251	5	5
Total loss	**1,421**	**18**	**1**	1785	101	5	5
				1786	877	4	2
				1787	571	11	1
				1788	1,046	4	2
				1789	293	11	11
				Total Gain	**3,473**	**10**	**4**

Actual Profit for Scaleburn Mine 1781 - 1789 = £2,051 12s 3d

The profit and losses for Scaleburn mine during the period 1791 to 1808 are given below.[12]

Date	Losses			Date	Gains		
	£	s	d		£	s	d
1792	237	10	11	1791	246	0	6
1794	252	12	9	1793	514	8	6
1798	30	4	1	1795	296	14	2
Total loses	**520**	**6**	**9**	1796	93	16	11
				1797	78	19	11
				1799	22	5	11
				1800	152	3	8
				1801	871	0	8
				1802	798	15	9
				1803	445	4	8
				1804	778	11	11
				1805	692	10	2
				1806	1,360	10	3
				1807	2,473	7	4
				1808	4,968	3	5
				Total Gain	**13,792**	**13**	**8**

Actual Profit for Scaleburn Mine 1791 - 1808 = £13,272 6s 11d

The London Lead Company continued to drive the Scaleburn vein and later the Scaleburn Cross vein, the latter being connected to the Broomsbury level as reported by Robert Stagg at Christmas 1819[13]. Access can be gained to this today from the Scaleburn Cross vein by descending a 30ft sump, followed by a 90 ft shaft. After travelling through very deep water you gain access to the Guddamgill Vein, and so onto Brownley hill. The Scaleburn vein was approaching exhaustion before the middle of the last century; the available separate records, for the period 1848-1882, show only 2,277 tons of lead concentrates, containing 73% lead, from which the silver recovery was 7 oz silver per ton of lead. The vein was not reworked during the period of zinc production and is considered to be exhausted.[14]

Many examples of miners graffiti can be seen in Scaleburn mine today, the earliest found to date is 1775 and the latest 1830.

In 1882, the London Lead company decided to put its leases and buildings up for sale and concentrate all its working in Teesdale and made Middleton in Teesdale its centre, where they continued operations until 1905 when the London Lead Company was finally wound up.

The Nenthead and Tynedale Lead and Zinc Company was formed to buy the London Lead Companies assets. The promoter's of this company were John and Joseph Swan.

John Swan described the activities of this company.[15]

"The mines were taken over from the London Lead Company with the object of working the zinc-ores on the property, in order to furnish supplies to the zinc works at Tindale Fell. These works were originally built by Mr James Henry Attwood, one of the brothers of a famous and very able family, of whom the best known in the north was Mr Charles Attwood, the founder of the Weardale Iron Works."

On the death of Mr Attwood, the zinc works passed onto the Nenthead and Tynedale Lead and Zinc Company.

The Company began actively working the deposits of zinc ore in the Nenthead mines and John Swan gave the production figures.

"In the last year of the London Lead Company's working about 1,500 tons of ore were raised. The Nenthead and Tynedale Lead and Zinc Company's operations raised: -

Year	Production in Tons
1883	2,275
1884	2,650
1885	3,034
1886	3,117
1887	3,205
1888	3,820
1889	4,010
1890	3,830
1891	3,940
1892	5,208
1893	5,378
1894	5,449
1895	5,550

"At this latter date, the lease of the land on which the zinc-works were built having expired; it was found impossible to obtain a renewal of the lease on practicable terms, and the mines were sold to Vieille Montagne Company, Liege."[16]

Another factor, not mentioned by Swan, must have been that during the 1890's the price of lead and zinc dropped to an all time low, which resulted in loses and the company ceased operation in 1896.

The mines at Nenthead were sold to the Belgian Vieille Montagne Zinc Company for £45,000; £35,000 in 1896 and £10,000 paid in instalments over the next 3 years.[17]

In the lease dated the 30th June 1896, between the Commissioners of Greenwich Hospital and La Societe Anonyme des Mines et Fonderies de Zinc de le Vieille Montagne registered near Liege, Belgium, the Duty rates are listed.

Selling price of lead	Duty rate
Not exceeding £15 per ton	1/27
Exceeds £15 but not £20 per ton	1/20
Exceeds £20 per ton	1/15

When the average price of spelter for any half year ending on the 30th day of June or 31st day of December ascertained to the rules set forth on the 4th schedule. This being the average of the daily quotation.

Selling price of Spelter	Zinc rent per ton
Does not exceed £15 per Ton	8d
Exceeds £15 but not exceed £18	11d
Exceeds £18 but not exceed £21	1s 11/2d

Exceeds £21 but not exceed £23	2s	0d
Exceeds £23 but not exceed £25	2s	6d
Exceeds £25	3s	0d

Lease assigned from 31st December 1895 for 42 years for Wellgill Nenthead.[18]

Swan gave the 1902 production for Vieille Montagne as 8,000 tons, this he said was because being wealthy and enterprising, they had continued to develop and to extend the workings. He also gave the numbers of men employed as, "upwards of 300, and the money disbursed, about £40,000 per annum."[19] A major factor in the success of the Vieille Montagne was the introduction of new machinery, they commenced mechanical drilling in 1898, but this tended only to be used in very hard ground. By 1913, there were 25 mechanised drills throughout the Vieille Montagne Zinc Company's' workings, using 500,000 cubic feet of compressed air each day.[20]

The Company worked the Brownley hill, Guddamgill, Scaleburn, Rampgill, Barney Craig, Middlecleugh North, Middlecleugh, Middlecleugh Second Sun, Longcleugh, Capelcleugh, and Archers veins, all being reached by adit-levels. The Barney Craig ore was brought out via the Rampgill level, all ore being brought out to Nenthead. The ore from the workings below the water level at Rampgill and Barney Craig mines was put into wagons and taken to the Rampgill shaft, here it was hoisted up to the Rampgill horse level by a 35 horsepower double acting winding engine; then it is drawn to the surface by a 12 horsepower single cylinder petrol driven locomotive, in trains of as many as 25 wagons.[21]

Hydraulic compressors were used one of which was sited at the foot of the Brewery shaft. Water from Smallcleugh dam was taken by iron pipe to the top of a 90ft tower positioned above the 328ft deep Brewery shaft. At the top of the tower air was admitted into the feedpipe and was sucked down by the descending water. At the bottom of the shaft the air was collected in a bell shaped air receiver, in this receiver the air separates from the water, rising to the top of the bell. Then the escaping water was led up another pipe to the Rampgill Level 200ft above and this creates the backpressure necessary to compress the air to a pressure of 90 pounds per square inch. This water was then directed back down the shaft via a third pipe to turn a Pelton wheel, which drove an air compressor at the bottom of the Brewery shaft. There were also electrical generators powered by pelton wheels at the bottom of the shaft. The compressed air was used to power drills, water pumps, and for ventilation, it was carried by pipes as far as the Wellhope shaft via Haggs level (part of this pipe work can still be seen in Haggs today). The compressed air was used in mines other than Rampgill such as Nentsbury Haggs and the Barney Craig.

Later a pipe was laid on the surface directly from Brewery shaft to Wellhope shaft (2 miles of 6 in pipe is shown on the map for the lease dated 30th June 1952 to Anglo Austral Mines Ltd[22]). The outflowing water was discharged along the Nentforce Level.

On Monday the 18th July 1904 at about 9pm the dressing plant was destroyed by fire (the damage was valued at approximately £12,500) so a

new large gravity mill was built on the site of the old one. The Krupps Company of Germany constructed this, and at the time it was one of the most modern plants in the country. This was a five-storey building capable of handling 200 tons of blende in a twelve-hour shift[23]. The mill was closed in 1921 but reopened in 1925 after the sinking of the Wellhope shaft, to which it was connected by an aerial ropeway. Due to problems with the aerial ropeway, the horse level was still used for haulage; and most of the ore was treated at the Haggs Mill, opposite the level entrance.[24]

During the second world war a flotation plant capable of dressing 1000 tons of gravel from the spoil heaps each day was housed in the old Nenthead mill, and between 1943 and 1946 the production was 19,941 tons of zinc and 1,385 tons of lead concentrates.[25]

In 1949 (lease dated 25th March 1949[26]), the assets of the Vieille Montagne Zinc Company at Nenthead were acquired by the Imperial Smelting Corporation Ltd and put under the control of one of its subsidiaries, Anglo-Austral Mines Ltd. In an amendment to the agreement on water rights between Anglo Austral and the admiralty dated 30th June 1952[27], the company received permission to dismantle, and dispose of as they will the tower over the Brewery shaft and in early 1954 the tower was demolished.

The mill at Nenthead was adapted to process fluorspar by the flotation method, the fluorspar being taken from Rotherhope fell mine and from the Heights and Cammock Eals mines. Fluorspar processing continued at the Rampgill mill up to 1960, but there was a reduction in demand and the decision to close the mill was taken the final batch of fluorspar was processed in mid January 1961. The plant was sold to Mr J Banks of Rampgill Mill Ltd for £7,000 in November 1961 who had purchased it to recover lead and zinc from the old mine dumps. Anglo-Austral Mines had given up all their assets at Nenthead by 1961.[28] The Rampgill Mill company went into voluntary liquidation; the notice for a meeting of the creditors to discuss the report of the liquidator for the year ending the 18th December 1965 appeared in the Newcastle Journal on the 31st January 1966.

Award by John Smeaton of the Boundary of Rampgill & Coalcleugh veins 8 May 1779 (D/Wal/31)

Whereas Joseph Hilton late Moor Master or principal mine agent to the Commissioners and Governor of the Royal Hospital for Seamen at Greenwich in the County of Kent, and Joseph Dickinson principal lead mine agent to Sir Thomas Blackett Bart., did on the 15th October 1778 sign a certain memorandum relative to the ascertaining of the Boundary between Rampgill and Coalcleugh vein which memorandum is in the words and figures following. That is to say.

Nenthead 15th October 1778

Memorandum We the undersigned having been requested to make the Dialling and measures for enabling us to fix the Boundary of Rampgill and Coalcleugh vein in the great Limestone, immediately underneath where it crosses the middle of the Long Ditch which said Ditch is cast and agreed upon to be the Boundary between the Manor of Alston Moor and the Regality or Manor of Hexham, and having carefully and at different times each of us made Dialling's and measures, and this day having jointly examined the same do agree that the whole is accurately done in consequence of which we have this day fixed a stake at the distance of forty eight feet or there abouts westward in the direction of the said vein from the middle of the said ditch, which stake is agreed up[on by us to be directly perpendicular above an Iron wedge which we also this day fixed in the east most sump sunk by the Governor and Company for Smelting down Lead &c., into the great Limestone in Rampgill vein, and which said iron wedge is driven into the rider in the north side of the said sump five feet below the bottom of the great Limestone *tumblers?* And it appears to us by this days examination that the said Governor & Company have in some parts of their great limestone forehead worked into the sills of the Blackett liberty and in other places not quite to it, and that the workings must be frequently examined as they are worked deeper, which will be very easily done so the stake and iron wedge are admitted to be right fixed.

Joseph Hilton Moor Master
Joseph Dickinson Principal Lead
Mine agent to Sir Thomas Blackett Bart.

And Whereas Robert Percival principal lead mine agent to the Governor and Company for Smelting down Lead with Pitt coal and Sea coal, lessees under the said Commissioner and Governor did object to the fixing of the stake above mentioned declaring that the same appeared to him not to be perpendicular to the Iron wedge above mentioned.

And Whereas John Smeaton of Austhorpe on the County of York Esq., engineer hath at the request of Messrs Nicholas Walton the younger and John Cruhloe Twiner on behalf of the said Commissioners and Governor and John Erasmus Blackett Esq., on behalf of the said Thomas Blackett Bart., taken upon him to ascertain the true point perpendicular to the said iron wedge, he the said John Smeaton doth make the following minute of his transactions in the business, that is to say.

We the said John Smeaton having carefully dialled and measured the said premises in question upon the 7th and 8th days of this instant May, being assisted by the said Robert Percival; and the said Joseph Dickinson taken every measure and observation at the view of the workings he the said John Smeaton doth hereby declare and decide that the said wedge described in the above recited memorandum is four inches north by east by the magnetic meridian from a perpendicular line supposed to be let fall from the center of a wooden post where it enters the surface of the ground, that was this day fixed at or about the distance of fifty eight feet westward from the point where the vein in the said workings underground will intersect the middle of the Long Ditch which long ditch is agreed upon to be the Boundary between the manor of

Alston Moor and the Regality of Hexham and in consequence of which operations a certain mark fixed by us at the forehead of the said workings was found and is hereby declared to be eighteen inches and one half inch within the boundary of the Manor of Alston Moor and so much short of the Regality of Hexham according to the present apparent course of the vein of that place. In witness where of I have here unto sett my hand this Eight day of May 1779

John Smeaton

We the said Robert Percival and Joseph Dickinson having perused the above do hereby agree to the above decision. Witness our Hands

Rob't Percival
Jos. Dickinson

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[1] Alston Moor Its Pastoral People, Its Mines and Miners. William Wallace 1890.
[2] A History of Lead Mining in the Pennines. A. Raistrick & B. Jennings 1989.
[3] Alston Moor Its Pastoral People, Its Mines and Miners. William Wallace 1890.
[4] Cumbria Record Office Carlisle Walton Collection D/WAL/31.
[5] Alston Moor Its Pastoral People, Its Mines and Miners. William Wallace 1890.
[6] Cumbria Record Office Carlisle Walton Collection D/WAL/17.
[7] Geology of the Northern Pennine Orefield. K. C. Dunham 1990.
[8] Handbook to Alston. Rev. W. Nall 1888.
[9] Greenwich Hospital Report 1870. Northumberland Record Office NRO M362.
[10] Geology of the Northern Pennine Orefield. K. C. Dunham 1990.
[11] Handbook to Alston. Rev. W. Nall 1888.
[12] Cumbria Record Office Carlisle Walton Collection D/WAL/17.
[13] London Lead Company Report Book 1806 – 1820. Northumberland Record Office LLC 40.
[14] Geology of the Northern Pennine Orefield. K. C. Dunham 1990.
[15] North of England Institute of Mining and Mechanical Engineers Transactions (Vol. 53 1902-1903, reproduced with permission. Copyright remains with the Institute)
[16] Ibid.
[17] The Nenthead and Tynedale Lead & Zinc Company Ltd, 1882 – 1896. J. K. Almond 1977. British Mining No. 5.
[18] Vieille Montagne Leases. Northumberland Record Office NRO 3444/71 and NRO 3444/85.
[19] North of England Institute of Mining and Mechanical Engineers Transactions (Vol. 53 1902-1903, reproduced with permission. Copyright remains with the Institute)

[20] The Nenthead Mines. M. F. Critchley 1984 (Revised 1998) Bulletin of the Peak District Mines Historical Society Volume 9, Number 1.
[21] The Nenthead Lead Mines and Works of the Vieille Montagne Zinc Company. J. Landless 1913. British Mining No. 5 1977.
[22] Northumberland Record Office NRO 3444/91.
[23] The Nenthead Lead Mines and Works of the Vieille Montagne Zinc Company. J. Landless 1913. British Mining No. 5 1977.
[24] The Nenthead Mines. M. F. Critchley 1984 (Revised 1998) Bulletin of the Peak District Mines Historical Society Volume 9, Number 1.
[25] Ibid.
[26] Northumberland Record Office NRO 3444/85.
[27] Northumberland Record Office NRO 3444/91.
[28] The Nenthead Mines. M. F. Critchley 1984 (Revised 1998) Bulletin of the Peak District Mines Historical Society Volume 9, Number 1.

A Plan of that part of the Boundary between the Manor of Alston Moor belonging to the Commissioners and Governors of the Royal Hospital for Seamen at Greenwich in the County of Kent, and the Liberty or Franchise of Hexham belonging to the Dean & Chapter of Durham in the County of Northumberland as the same was Surveyed and Admeasured in the Year 1770 by the Bounder Cornet and Assistants whose Names are hereunto subscribed, and Ordered and Directed to be Surveyed Admeasured and Bounded by Mr. Gabriel Hutton and John Swinton Deputies to Mr. Joseph Hilton in the Part of the said Commissioners and Governors and by Mr. Adam Bell and Mr. Joseph Hodgson Deputies to Mr. Benjamin Wilson in the Part of the said Dean & Chapter and Elizabeth Bird Bailiff to the Liberty which said Deputies in the Presence of the said Bounder Cornet and Assistants have Signed Sealed and Delivered the same with Indented Memorandums

Jos. Hilton
Jno. Swinton

The REGALITY of HEXHAM in the County of NORTHUMBERLAND belonging to Sr. THOS. BLACKETT BART.

The MANOR of ALSTON-MOOR in the County of CUMBERLAND belonging to the COMMISS.rs and GOVER.rs of GREENWICH HOSPITAL

The bearings were taken with a Theodolite, graduated & counted to the short Ends by which the Boundary or any part thereof may be measured, or any subsequent should the Dean & Chapter think fit, at any time to Survey their bearings & lengths were preserved.

MAGNETIC Meridian

Bride Laws Crofts
Bride Laws Head
Bride Laws Cairn
Bride Laws Gate
Bride Laws Burn
Bride Laws Hill
Bride Laws Sike
Bride Laws Sike Head
Bride Laws Sike Foot
Bride Laws Sike Cairn
Bride Laws Sike Gate
Bride Laws Sike Burn
Bride Laws Sike Hill